
Hoya persiciniconaria (Apocynaceae, Asclepiadoideae), a New Species from Hainan, China

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ABSTRACT. The new species *Hoya persiciniconaria* S. Y. He & P. T. Li (Apocynaceae, Asclepiadoideae) is described and illustrated from Hainan, China. The morphology of the related species *H. pottsii* Traill and *H. liangii* Tsiang are compared to the new species, which differs in its indumentum, leaf arrangement, leaflet pattern, leaf shape, apex, and size, calyx shape, and corolla color.

Key words: Apocynaceae, Asclepiadoideae, China, Hainan, *Hoya*, IUCN Red List.

Hoya R. Brown is a genus of about 60 species distributed in tropical Asian Malesia and Australia, and with 32 species in India (Hooker, 1885). In his later study, Costantin (1912) maintained that the genus comprised approximately 70 species across tropical Asia and Australia. More recently, about 200 species were considered to be distributed throughout the moister parts of the eastern tropics from Nepal and Ceylon to southern China, northern Australia, and the Pacific region, with 29 species in India (Jagtap & Singh, 1999). Tsiang and Li (1977) recognized the genus as having ca. 200 species distributed from eastern Asia to Oceania, and 22 species, three varieties, and two forms in China. Thirty-three species and one variety of *Hoya* are currently recognized in China (Gilbert et al., 1995; Li et al., 1995; He et al., 2009b), with Yunnan, Hainan, Guangdong, and Guangxi provinces as the centers of distribution, and with 12 species recorded in Hainan (Li et al., 1995; He et al., 2009a, b). Forster and Liddle (1996) recognized the genus as having more than 300 species distributed primarily in Malesia, particularly the Philippines, New Guinea, the western Pacific Islands, and Asia, including the Indian subcontinent; they recognized six native species in Australia, among which were one endemic and one naturalized species. Regardless of which circumscription is recognized, the International Plant Names Index (<<http://www.ipni.org>>) lists nearly 500 named species in *Hoya* in the world so far.

Hoya is characterized as a taxon by its opposite leaves and simple leaflet pattern (Hooker, 1885;

Costantin, 1912; Li et al., 1995; Jagtap & Singh, 1999). However, four unusual specimens of *Hoya* were collected by the authors while on two expeditions to Bawangling in Hainan Province in 2007 and 2008. After comparison with specimens at CANT, KUN, HITBC, and IBSC and literature surveys, these collections prove to be a new species. The new species is distinguished by leaves that are alternate, opposite, or whorled and a leaflet pattern that is either simple or ternate, which is rare for *Hoya*, with only *H. dickasoniana* P. T. Li previously described with opposite and whorled leaves (Li, 1994).

Hoya persiciniconaria S. Y. He & P. T. Li, sp. nov. TYPE: China. Hainan Prov.: Bawangling, on a tree in montane tropical rainforest, 19°06'N, 109°06'E, 214 m, 8 Aug. 2007, S. Y. He & J. Y. Lin 0708086 (holotype, CANT, photo at MO). Figure 1.

Haec species *Hoyae liangii* Tsiang valde affinis, sed ab ea foliis alternis oppositis vel verticillatis, simplicibus vel trifoliolatis, calyce extra strigoso, corolla intra albida et dilute persicina atque corona intra persicina differt.

Epiphytic vine, glabrous except for the calyx and corolla; stems thick, terete, with tumid nodes evident, young stems dark green, mature ones gray-white. Leaves alternate, opposite, or whorled, leaflet pattern simple or ternate, fleshy; blades similar and flat, elliptic or obovate, 7–10 × 4–5 cm, ca. 0.3 cm thick; blade surfaces reticulate, with the midrib and lateral vein evident or indistinct, lateral veins in 3 to 5 pairs, adaxially green, abaxially light green, base green; blade with base rounded or cuneate, apex rounded, cuspidate, or retuse; petiole 0.5–1 cm, ca. 0.6 diam., green or gray-white, adaxially with 1 or 2 glands. Peduncle 3.5–7 × 0.4–1 cm, acropetally green, pedicel ca. 1.5 cm, yellowish green; perennial umbel, 5 to 20 flowers; calyx elliptic, apex rounded, externally strigose, yellowish green; corolla pubescent on upper surface, ca. 1.3 cm diam., lobes ca. 3 × 3.5 mm, white with peach markings, lightly reflexed

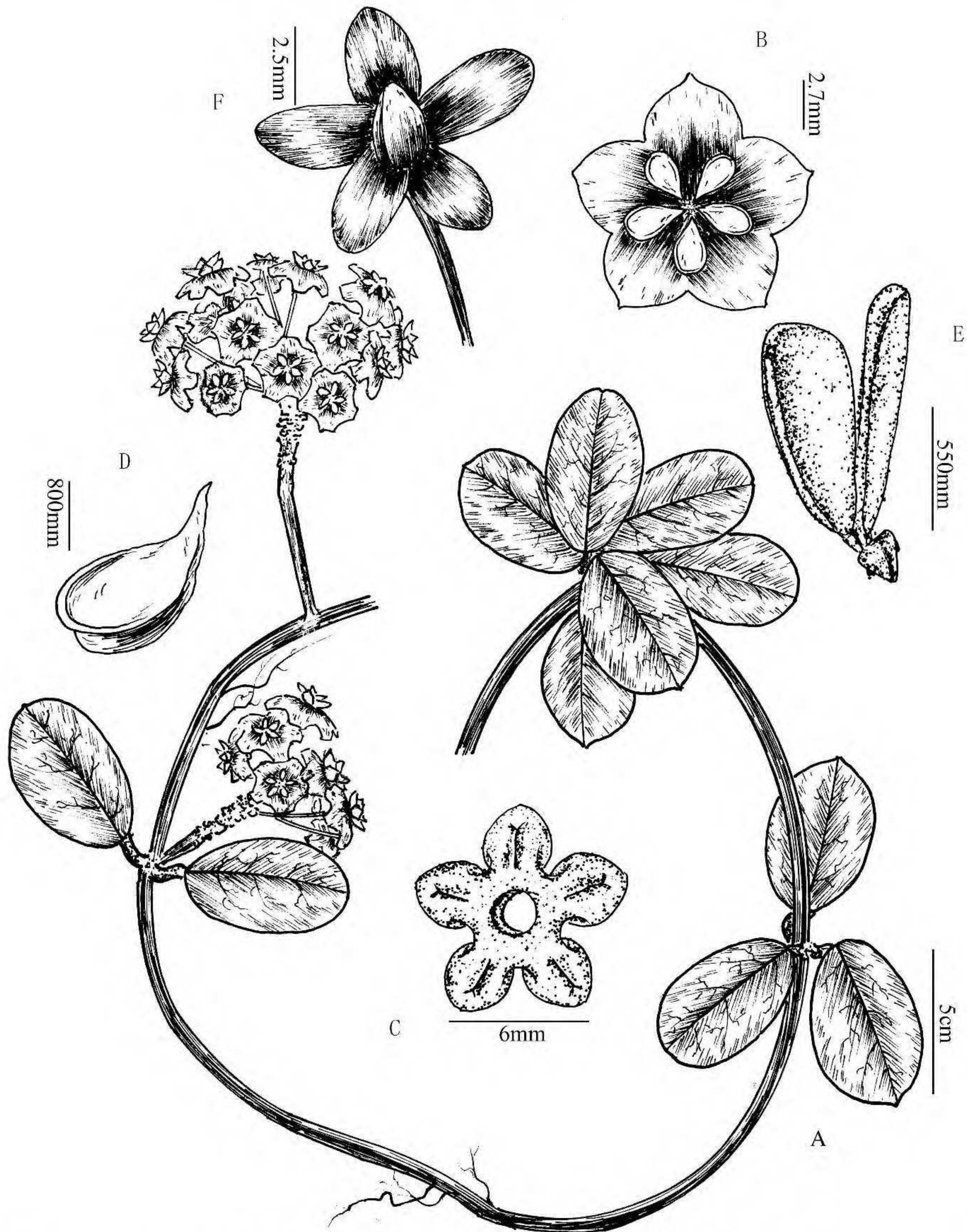


Figure 1. *Hoya persicinicornaria* S. Y. He & P. T. Li. —A. Flowering stem. —B. Flower. —C. Outer corona. —D. Corona, side view. —E. Pollinarium. —F. Calyx and ovary. Drawn from the holotype (He et al. 0708086, CANT).

toward the outer lobe; corona lobes waxy, scales elliptic, pumpkinseed-shaped, with the scales of the corona toward the center with ascending tips, cuspidate, the outer end obtuse, the margins with a hump above the middle, peach-colored, lobe dorsally channeled in the middle, but not to apex, with a branch, lobe ca. 2.7×2 mm, ca. 2 mm thick; stigma well developed; pollinia compressed, with the extremity broad, but sloping inward, golden yellow, ca. 530×330 μm , outer apex obtuse with hyaline banding not reaching pollinium apex; retinaculum minute,

rhomboid, the stamens situated on the inner basal parts and enclosing the pistil.

Habitat and ecology. *Hoya persicinicornaria* grows in montane tropical rainforest, at altitudes from 200–250 m, as an epiphyte on trees. It is associated with *Taxotrophis aquifolioides* W. C. Ko, *Streblus taxoides* (Roth) Kurz, *Terminalia hainanensis* Exell, *Olea hainanensis* H. L. Li, *Drypetes indica* (Mueller Argoviensis) Pax & K. Hoffmann, *Clausena dentata* Burman f., *Capparis zeylanica* L., and *Renanthera coccinea* Loureiro.

Table 1. Morphological comparison of *Hoya persicinicononaria*, *H. pottsii*, and *H. liangii*.

| Characters | <i>H. persicinicononaria</i> | <i>H. pottsii</i> | <i>H. liangii</i> |
|--------------------------|---------------------------------------|---|------------------------------|
| Indumentum | glabrous except for calyx and corolla | glabrous | glabrous except for corolla |
| Leaf arrangement | alternate, opposite, or whorled | opposite | opposite |
| Leaflet pattern | simple or ternate | simple | simple |
| Leaf texture | fleshy | fleshy | fleshy |
| Leaf shape | elliptic or obovate | ovate-oblong or oblong-lanceolate | obovate or obovate-oblong |
| Blade apex | rounded, cuspidate, or retuse | acute | obtuse or rounded |
| Blade base | rounded or cuneate | rounded or subcordate | rounded or subcordate |
| Blade length | 7–10 cm | 6–12 cm | 4.5–8 cm |
| Blade width | 4–5 cm | 3–6 cm | 3–5 cm |
| Leaf venation | lateral veins in 3 to 5 pairs | basal veins trinerved | lateral veins in ca. 4 pairs |
| Calyx shape | elliptic | deltoid | deltoid |
| External calyx surface | strigose | glabrous | glabrous |
| Calyx apex | rounded | acuminate | obtuse |
| Internal corolla surface | white pilose | white pilose | puberulent |
| Corolla color | white with peach markings | white with reddish center | creamy white |
| Corolla diameter | ca. 1.3 cm | ca. 1 cm | ca. 1.2 cm |
| Distribution | China: Bawangling, Hainan Province | China: Guangdong, Guangxi, Hainan, and Yunnan provinces | China: Hainan Province |

Distribution. *Hoya persicinicononaria* is currently only known from the type collections from a small area in Bawangling, Hainan Province, China. Other species of *Hoya* usually grow at elevations between 200 and 1000 m in Bawangling. Another Chinese endemic, *H. lasiogynostegia* P. T. Li, was recorded 25 years ago from Diaoluashan and Jianfengling, Hainan Province (Li, 1984), and was recently rediscovered in Bawangling, Hainan Province (S. Y. He 20085121, CANT).

IUCN Red List category. *Hoya persicinicononaria* is endemic to Hainan, China. It is found in a disturbed area, and its area of habitat has declined gradually. Our fieldwork indicates that the new species has a total population of approximately 300 mature individuals, with an area of occupancy estimated to be less than 10 km². Therefore, according to IUCN Red List criteria (IUCN, 2001), this species should be considered Vulnerable (VU D1+2).

Phenology. The new species was observed to flower from May to August. The fragrance of the fresh flowers is sweet.

Etymology. The specific epithet is derived from the new taxon's peach-colored corona.

Discussion. *Hoya persicinicononaria* closely resembles *H. pottsii* Traill and *H. liangii* Tsiang, but differs from these species in indumentum, leaf arrangement, leaflet pattern, leaf shape, apex, and size, calyx shape, and corolla color (Table 1).

Paratypes. CHINA. **Hainan:** Bawangling, on tree in montane tropical rainforest, 19°06'N, 109°06'E, 210–220 m, 8 Aug. 2007, S. Y. He & J. Y. Lin 0708087 (CANT), 0708088 (CANT), 12 May 2008, S. Y. He 0805121 (CANT).

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